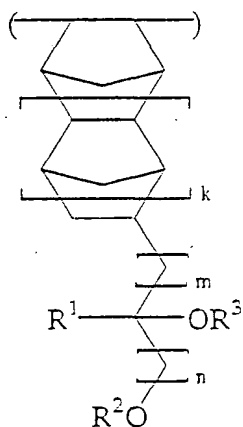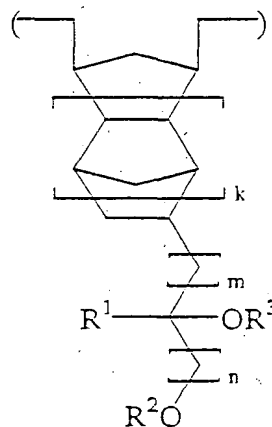CLAIMS:

1. A polymer comprising recurring units of the following general formula (1-1) or (1-2) derived from the ether compound of the above formula (1) and having a weight average molecular weight of 1,000 to 500,000,
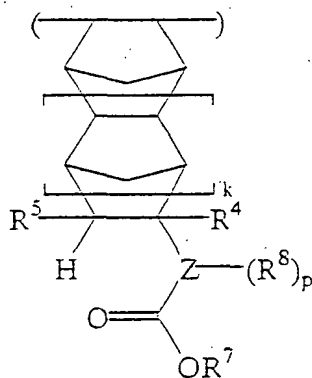

(1-1)   (1-2)

wherein k, m, n, and R^1 to R^3 are as defined above.

2. The polymer of claim 1 comprising, in addition to the recurring units of formula (1-1), recurring units of the following general formula (2-1):

(2-1)

wherein k is as defined above,
    R^4 is hydrogen, methyl or $CH_2CO_2R^6$,
    R^5 is hydrogen, methyl or CO_2R^6,

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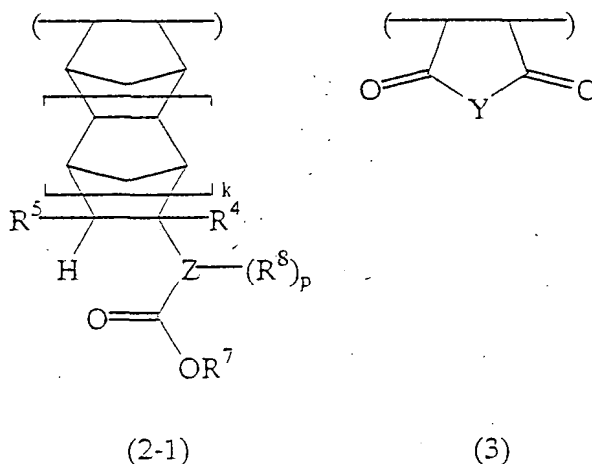R^6 is a straight, branched or cyclic alkyl group of 1 to 15 carbon atoms,

R^7 is an acid labile group,

R^8 is selected from the class consisting of a halogen atom, a hydroxyl group, a straight, branched or cyclic alkoxy, acyloxy or alkylsulfonyloxy group of 1 to 15 carbon atoms, and a straight, branched or cyclic alkoxycarbonyloxy or alkoxyalkoxy group of 2 to 15 carbon atoms, in which some or all of the hydrogen atoms on constituent carbon atoms may be substituted with halogen atoms,

Z is a single bond or a straight, branched or cyclic (p+2)-valent hydrocarbon group of 1 to 5 carbon atoms, in which at least one methylene may be substituted with oxygen to form a chain-like or cyclic ether or two hydrogen atoms on a common carbon may be substituted with oxygen to form a ketone, and
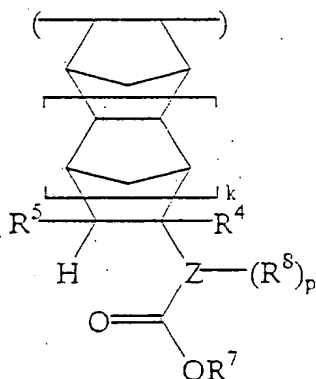
p is 0, 1 or 2.

3. The polymer of claim 1 comprising, in addition to the recurring units of formula (1-1), recurring units of the following general formulae (2-1) and (3):


(2-1)   (3)

wherein Z, k, p and R^4 to R^8 are as defined above, and Y is an oxygen atom or NR^9 wherein R^9 is a straight, branched or cyclic alkyl group of 1 to 6 carbon atoms.
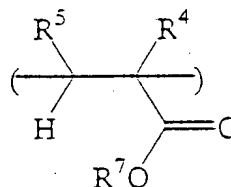
4.   The polymer of claim 1 comprising, in addition to the
recurring units of formula (1-1), recurring units of the
following general formula (4) alone or in combination with
recurring units of the following general formula (2-1), and
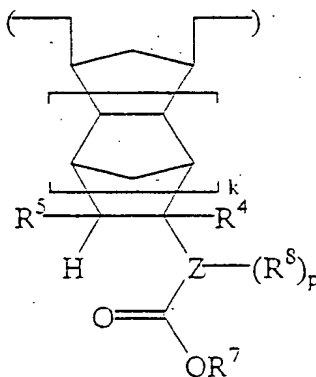recurring units of the following general formula (3):
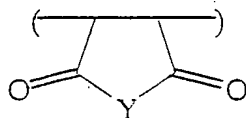
$$(2-1) \qquad\qquad (3) \qquad\qquad (4)$$

wherein Y, Z, k, p and R^4 to R^9 are as defined above.

5.   The polymer of claim 1 comprising, in addition to the
recurring units of formula (1-2), recurring units of the
following general formula (2-2):

$$(2-2)$$

wherein Z, k, p and R^4 to R^8 are as defined above.

6.   A resist composition comprising the polymer of claim 1

7. A process for forming a resist pattern comprising the steps of:

applying the resist composition of claim 6 onto a substrate to form a coating,

heat treating the coating and then exposing it to high-energy radiation or electron beams through a photo mask, and

optionally heat treating the exposed coating and developing it with a developer.